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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,086	09/20/2001	Rajiv Doshi	19441-0034	5046

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EXAMINER	
WALKER, KEITH D	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/960,086	DOSHI ET AL.	
	Examiner	Art Unit	
	Keith Walker	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-37* is/are pending in the application.

4a) Of the above claim(s) *11-37* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, Claims 1-10 in the reply filed on 5/4/06 is acknowledged. The traversal is on the ground(s) that the components in the apparatus are needed for the method of operation in Group III. This is not found persuasive because all of the particulars of the apparatus are not needed for the method, such as the recupurator. Furthermore, the method does not impart the same construction limitations as is required by the apparatus, in that all of the components would not have to be within the thermal enclosure.

The requirement is still deemed proper and is therefore made FINAL.

Remarks

Claims 1 & 3-37 are pending in the application and claims 11-37 are withdrawn from consideration. Claims 1 & 3-10 are pending examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3, 4 & 9 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,763,114 (Khandkar).

Khandkar teaches a fuel cell system comprising a fuel cell stack with an internal manifold that exchanges heat between partially reacted fuel fluid and partially reacted

oxidant fluid without reacting. A recuperator (80) is used to exchange heat between the fuel cell exhaust gas and oxidant fluid (Figs. 2, 8 & 9; 12:30-58, 13:46-60, 14:54-67, 15:43-50). A combustion chamber surrounds the fuel cell and a thermal enclosure surrounds the whole assembly (20:4-10, 13:9-16). Inside the enclosure, the fuel travels through a reformer, preheating the fuel before delivery to the fuel cell stack (10:44-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,763,114 (Khandkar) in view of US Patent 4,729,931 (Grimble).

The teachings of Khandkar as discussed above are incorporated herein.

Khandkar is silent to the use of a fuel vaporizer.

Grimble teaches using a nozzle that forms a jet stream from the fuel, and thus vaporizes the fuel (2:47-49).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system on Khandkar with the vaporizing nozzle of Grimble to effectively distribute the fuel to the fuel cell system.

3. Claims 6 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,763,114 (Khandkar) in view of US Publication 2003/0022050 (Barton).

The teachings of Khandkar as discussed above are incorporated herein.

Khandkar does not disclose airflow delivery, which pressurizes the oxidant and provides pressurization for the fuel, a pressure relief valve, or an air compressor for delivering airflow.

Barton discloses fluid supply systems for fuel cells, which include pressurized fluid and pressure relief valves for the purpose of controlling fluid flow in the fuel cell ([0049, 0051 and 0054]).

Therefore, it would have been obvious to one of ordinary skill in the art to use the pressurization and pressure control systems disclosed by Barton in the fuel cell system disclosed by Khandkar in order to control oxidant and fuel flows in the fuel cell system.

4. Claims 7 & 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,763,114 (Khandkar) in view of US Patent 4,087,076 (Morrow).

The teachings of Khandkar as discussed above are incorporated herein.

Khandkar is silent to thermal enclosures which are vacuum vessels or which include multi-layer insulations.

Morrow teaches the most effective insulation for high temperature electrolytic devices consists of multi-layer radiation shields of molybdenum-zirconia cloth in a vacuum insulation (7:37-47).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the insulation of Khandkar with the insulation of Morrow to improve the insulating properties of the thermal enclosure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KW

PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER